

IN THE ABSTRACT:

The Abstract as amended below with a replacement Abstract shows added text with underlining and deleted text with ~~strikethrough~~. A clean Abstract is also attached, as a convenience of the Examiner.

A direct-current to direct-current conversion (DC/DC) apparatus includes a control circuit having an error amplifier for voltage control, basing and ~~controlling a direct current to direct-current~~ the conversion based on a pulse width modulation control using an output of the error amplifier. The error amplifier inputs a voltage signal corresponding to an output voltage of a DC/DC result and a plurality of reference voltage signals. The DC/DC apparatus also includes a soft start capacitor to provide one of the plurality of reference voltage signals. The error amplifier amplifies a difference between the voltage signal corresponding of the output voltage of a DC/DC result and a voltage signal of a lower potential among the plurality of reference voltage signals and, ~~based on the amplified output,~~ carries out the pulse width modulation control. Furthermore, the control circuit includes a circuit for discharging charges corresponding to the output voltage of the DC/DC result when a power supply to the control circuit is turned off.

~~By the constitution, it is possible to easily realize power turn on/turn off sequence controls without requiring any special logic circuit, and thus to control rise/fall characteristics of the output voltage without depending on the load.~~